Winberg, T. Mikael; Hellgren, Jenny M.; Palm, Torulf

Stimulating positive emotional experiences in mathematics learning: influence of situational and personal factors.


Summary: The study aims to assess the relative importance of a large number of variables for predicting students’ positive-activating emotions during mathematics learning. Participants were 668 first-year upper secondary school students from 33 schools of different sizes and locations. Two questionnaires were distributed, one assessing students’ perceptions and beliefs about their learning situation in mathematics in general, and the other assessing the characteristics of a particular mathematics lesson and the students’ emotional experiences during this lesson. Single-construct and multivariate models for predicting students’ emotions were computed. The results show that the multivariate models were the most efficient, predicting as much as 59% of the variance in students’ emotional experiences. The two most important constructs were students’ type of motivation and perceived degree of learning, which together predicted 48% of the students’ emotions. Single-construct models predicted, at most, 36%. The relative and absolute predictive ability of different motivational constructs are reported. The relationships between constructs and their implications for teaching are discussed.

Classification: C24

Keywords: positive-activating emotions; personal factors; situational factors; upper secondary school; multivariate
doi:10.1007/s10212-014-0220-y